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THE

COMMENCEMENT

OF THE

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NINETEENTH CENTURY,

DETERMINED
UPON UNERRING PRINCIPLES.

BY

ANDREW MACKAY, LL.D. F.R.S. EDIN. &c.

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P R E F A C E.

THE reason which gave rise to the publication of the following pages, is briefly as follows.

Soon after the question relative to the Commencement of the Nineteenth Century began to be agitated, it was frequently mentioned to the writer of this tract, and his opinion desired; which he gave without the least hesitation, and illustrated by various familiar examples. The same question having again attracted the notice of the public, several persons repeatedly requested the author to write a few hints upon this subject. This he complied with, in consequence of finding many Professors and Clergymen in Scotland, of eminence and abilities in their respective departments, strenuously supporting an opinion which the author deems erroneous; and in which they would, no doubt, be followed by many who had not sufficiently considered the subject.

It may be observed here, that the following pages are not written for the use of the Astronomer, who can only entertain one opinion; and to whom, there can be nothing new contained in this pamphlet: neither is it intended for those who are acquainted with the doctrine of Fluxions, Prime and Ultimate Ratios, Exhaustions, Infinite Series, the Arithmetic of Infinites or Indivisibles, the Differential Method, &c. nor indeed for any person who professes even the least knowledge of Mathematics; as his opinion must naturally coincide with that of the Astronomer.

In order to render this tract more complete, several extracts, from the public papers, are added by way of appendix.

Aberdeen,
1st February, 1800. }

THE
COMMENCEMENT
OF THE
NINETEENTH CENTURY,

&c.

A QUESTION, rather more of curiosity than of real utility in common life, has for some time past engaged the attention of the Public; namely, Whether the end of the year denominated 1799, or that of 1800, terminates the eighteenth century: or, in other words, Whether the nineteenth century commences with the beginning of the year marked 1800, or with that of 1801. A great deal has been said and written upon this subject, and as much keenness of temper has been shown by some of the contending parties, as if it had been a question of the first importance: many of the arguments used, display ignorance in its highest pitch; and some of those who could not give any satisfactory evidence, have endeavoured to get the better of their adversary, by asking questions not connected with the subject, and tending only to perplex the matter.

That

That the end of the year commonly denominated 1799, is the termination of the eighteenth century; and, therefore, the beginning of the year marked 1800, the commencement of the nineteenth century; the author of this tract cannot entertain, even, a doubt. And that the celebrated Drs. Maskelyne and Herschel, and the very learned M. de la Lande, as well as every other practical astronomer, are of the same opinion, is only what he could have expected: and he flatters himself the following arguments will be convincing to at least some, if not to all, of those who are still on the opposite side of the question. It will, however, be necessary to premise the following definitions, as being intimately connected with the subject.

DEFINITIONS.

I.

An *ÆRA*, is a particular account or reckoning of time, from some certain point; to which account all remarkable events or actions are referred. As the Christian *æra*, which is used at present in Europe; the *æra* of Nabonassar, which has always been famous among astronomers; &c. An *æra*, therefore, has a beginning, but no end.

II.

An *EPOCH*, is the beginning or first instant of an *æra*.

III. A

III.

A PERIOD OR CYCLE, is a certain portion of time. The following are the principal periods or cycles.

The cycle of the SUN is a period of 28 years; in which space of time, all the varieties of the dominical letters will have happened; and they will return in the same order as they did 28 years before.*

The cycle of the MOON, called also the Metonic cycle, from the name of its inventor, is a period of 19 years, containing all the variations of the days on which the new and full moons happen; after which they will fall on the same days they did 19 years before. The number of years elapsed in this cycle, is called the *prime*, or *golden number*.

The cycle of INDICATION, is a period of 15 years, used by the Romans; as once in that period, a tax was collected among the inhabitants of those countries which they had conquered.

The VICTORIAN Period, so called from its inventor Victorinus, or Victorius, and employed by him to find Easter, is a period of 532 years, arising from

* The first seven letters of the alphabet, are placed in the Calendar opposite the seven days of the week, and that letter which answers to Sunday is called the *dominical letter*. If the year contained exactly 365 days, a period of the dominical letters would be completed in seven years; but because every fourth year, which is called *bissextile* or *leap* year, contains 366 days, the period is, therefore, extended to four times seven, or 28 years.

from the multiplication of the solar and lunar cycles. This is also sometimes called the *Dionysian* period.

The JULIAN Period, invented by Joseph Scaliger, contains 7980 years, being the product arising from the multiplication of the cycles of the sun, moon, and indiction.

IV.

A CENTURY, is a period of one hundred years.

V.

A SECULAR, or CENTURIAL year, is the first year of a century.

As a previous step towards determining the commencement of the nineteenth century, it will be necessary to show that the first year of the Christian æra was called the year 0.

In astronomical and chronological tables, the first year of the Christian æra is denominated 0. Thus the mean longitude of the sun, at the instant of mean noon of the first day of the year 0, under the meridian of Greenwich, according to Mayer's Tables,* p. vi. is $9^{\circ} 7' 49'' 20''.9$; and that of the moon at the same instant, page xxxvi. is $11^{\circ} 21' 46'' 24''$: whereas, at the instant of mean noon of the first day of the year 1, as deduced from the same tables, the sun's longitude is $9^{\circ} 7' 35'' 1''.9$; and the mean longitude

* Printed in London by order of the Commissioners of Longitude 1770.

gitude of the moon at the same instant $4^{\circ} 10' 9'' 29'''$. Also the mean longitude of Mercury, at the instant of mean noon of the first day of the year 0, was $8^{\circ} 23' 59' 9''$; and that of Venus $5^{\circ} 28' 28' 33'''$, according to M. de la Lande's tables.* The mean longitude of Mars at the same instant was $6^{\circ} 28' 16' 32'''$ by Cassini's Tables.† The mean longitude of Jupiter at the instant of the beginning of the year 0, was $4^{\circ} 29' 32' 39''.8$; and that of Saturn at the same instant $2^{\circ} 0' 0' 21''.7$, agreeable to the tables of M. de Lambre.‡

According to Ferguson's tables for finding the golden number, &c., the golden number for the year 0 is 1, and the dominical letters for the same year were D. C. §; and hence, the day of the week answering to the first day of the year 0 was Thursday; also the epact || of the year 0 was 6.d. 1h. 10' 1". ¶ Again, Ferguson, in his Select Exercises, page 161, says,

* Printed at Paris 1792.

† Printed at Paris 1740.

‡ Printed at Paris 1789.

§ Ferguson's Astronomy, London 1778, pages 363. 398. 394. Ferguson's Tables and Tracts, pages 196, 197. Vince's Astronomy, Vol. I. page 580. Encyclopedia Britannica, Vol. IV. page 754. English Encyclopedia, Vol. II. page 525. Playfair's Chronology, Table XV. page 317; Table VXIII. page 318. Newhouse's Navigation, London 1686, page 2 of tables, &c.

|| The epact of any given year, is the age of the moon at the commencement of that year.

¶ M. de la Lande's astronomical tables, page 102, Paris 1792.

says, the year 0 was a leap year; and that there was a difference of two days between the old and new stiles in that year. In his *Tables and Tracts*, page 180, at the end of his table of remarkable æras and events, he says, "In this table, the years both before and since CHRIST are reckoned exclusive from the year of his birth." Mr. Ferguson, speaking of an ancient eclipse of the moon, expresses himself as follows: "Now as our Saviour was born (according to the *Dionysian* or vulgar æra of his birth) in the 4713th year of the *Julian* period, it is plain that the 4513th year of that period was the 200th year before the year of Christ's birth; and, consequently, 201 years before the year of Christ 1."* From hence it is evident, that Ferguson considers the first year of the Christian æra to be denominated 0.

In the table of epochs in Dr. Hutton's *Philosophical and Mathematical Dictionary*,† it is said, the *Dionysian*, or vulgar æra of Christ's birth, was the 4717th year of the *Julian* period, 4007th year of the world, and 0 year of Christ. See also Ferguson's *Astronomy*, page 391; Ferguson's *Tables and Tracts*, page 179, &c.

The authority of M. de la Lande upon this subject is

* Ferguson's *Astronomy*, p. 344, and his *Astronomical Tables*, page 62. See also Martin's *Philological Library*, page 279. Playfair's *Chronology*, Table X. page 314.

† Vol. I. page 434.

is incontestible : in the third edition of his *Astronomie*, printed at Paris 1792, Vol. II. page 86, he says, "Because the year in which J. Christ was born ought to be called 0."* In the same page he says, "In proceeding in like manner by a continual subtraction of the secular motion, we come to the year 100 of J. C., afterwards to the year 0, and from thence to the year 100 before J. C.; hence, from the year 100 of our æra to the year 100 before our æra, there is an interval of 200 years.† Again, M. de la Lande, in speaking of the Victorian or Dionysian period, Vol. II. p. 231, says, "But in *l'Art de Verifier les dates*, they made this period begin with the year 0 of J. C., which had 9 for the solar cycle, and 1 for the cycle of 19 years.‡

Nor is it possible for it to have been otherwise; for since a year is divided into twelve parts, called *months*; therefore, until the first twelve months from the epoch were completed, 1 could not be marked as the date of
of

* "Parceque l'année où est né J. C. doit s'appeller *Zero*." See also Cassini's *Astronomical Tables*, pages 5 and 10.

† "En remontant ainsi par une soustraction continuelle du mouvement féculaire, on parvient à l'année 100 de J. C., ensuite à l'année 0, et de là à l'année 100 avant J. C.; ainsi de l'année 100 de notre ère à l'année 100 avant notre ère, il y a 200 ans de distance."

‡ "Mais dans *l'Art de verifier les dates*, on fait commencer cette periode l'année 0 de J. C. qui avoit 9 de cycle solaire, et 1 de cycle de 19 ans."

of that year: the year contained between the beginning and end of the second twelve months would necessarily be marked 1, by which it is clearly understood that the first twelve months of the æra were expired, and the second year running on; and so on of succeeding years.

Unless the first year of the Christian æra, or, indeed, that of any other æra, had been denominated 0, it would be impossible to make astronomical calculations; and that this was really marked the year 0, will also appear evident from the following

EXAMPLE.

Let it be required to find the sun's longitude on the 17th October at 8 hours A. M.; mean time at Aberdeen in the year 0, by M. de la Lande's tables, printed at Paris 1792?

Longitude

Longitude of Aberdeen from Greenwich in time,* 8' 32" W.
 Longitude of Paris from Greenwich in time,† 9 19 E.

Diff. of Long. in time between Paris and Aberdeen, 17 51
 Mean time at Aberdeen, - - Oct. 16 d. 20 h. 0 0

Mean time at Paris, - - - - - 16 d. 20 h. 17 51

Time.	Sun's Long.	L. ☉'s Ap.	Arg. I.	Arg. II.	Arg. III.	Arg. IV.	Arg. V.	Arg. VI.
Year 0	9° 7' 55" 40" 3	2° 8' 24' 42"	205	357	224	693	110	200
Oct. 16 d.	9 14 51 7 4	49	786	725	495	370	50	42
20 h.	49 16 9		28	2	1			
17'	41 9							
51"	2 1							
Mean Long.	6 23 36 48 6	2 8 25 31	19	84	720	63	160	242
Elliptic Eq.	— 1 22 35 2	6 23 36 49	D	24	♀	♂	♂	♂
Sec. dimin.	+	3 59 4						
Equat.	6 22 18 12 8							
	+							
	+							
	—							
	—							
	+							
	+							
Sun's Long.	6 22 18 29 3							

at Aberdeen, 17th October, at 8 hours A. M. of the year 0.

Again,

* Transactions of the Royal Society Edinburgh, Vol. IV.

† Transf. of the Royal Soc. London for the year 1790, Part I.

Again, by calculating from Ferguson's tables, it will be found, that a total eclipse of the moon happened on the 9th of January old stile, of the year 0, which began about 7 o'clock in the evening, mean time at London, and ended at half past 10 at night, and that the duration of total darkness was about one hour and a half.*

That the date of the first year of any æra is 0, will appear obvious from the following consideration. Since the year commences with the first of January, therefore, from the epoch of our æra to the end of December following, one year will be elapsed; and reckoning backward from the epoch of our æra, to the beginning of the preceding January, there will be another year. Hence, there will be an interval of two years between the first of January preceding, and the first of January following the epoch of our æra. Whereas, if the year from which the commencement

of

* Eclipses are of essential use in chronology. They serve to ascertain, with precision, the dates of those events with which they are connected in history. When any transaction or occurrence is referred to a particular epoch, at or near which an eclipse of the sun or moon is said to have happened, that epoch may be accurately fixed, and the veracity of the writer may be proved, by a calculation of the time, and other circumstances of the eclipse. Playfair's Chronology, page 177.

It is by means of a lunar eclipse that there is discovered a mistake in placing the vulgar æra of CHRIST. Costard's History of Astronomy, page 235; see also the preface to M. de la Lande's Astronomy, page 17.

of the Christian æra is dated, be called 1, then, as this year, in that case, must be reckoned twice,* there will be an interval of three years, which is absurd.† Hence, the first year of the Christian, as well as that of every other æra, ought to be, and is denominated 0.

If it had been imagined, that any additional confirmation was wanting to establish the first year of our common æra to have been denominated 0, the calculations, of the beginnings and endings of all the eclipses, and of the occultations and other phenomena which happened in that year, would have been given. This, however, seems unnecessary.

As a farther confirmation of the above, we shall insert the following extract, from a dissertation on the achronical rising‡ of the stars, by the Lord Bishop of Rochester, § inserted at the end of Dr. Vincent's voyage of Nearchus, printed at London 1797, which the author had not seen until after this tract was written.

“ You will perhaps suspect that I have committed a mistake in the very entrance upon these calculations,
by

* It is upon this account, that chronologers err a year in all their dates before the Christian æra.

† This may be illustrated by several very simple experiments. See also page 11th.

‡ A star is said to rise achronically, when it rises at the instant the sun is setting.

§ That celebrated mathematician Dr. Samuel Horsley, the editor of the works of Sir Isaac Newton, in five volumes 4to.

by reckoning the interval between the commencement of the year before our Lord 326 and the commencement of the year of our Lord 1760, no more than 2085 Julian years, whereas you may think it was 2086. The truth however is, that, through carelessness, I fell into the opposite mistake; I reckoned the interval 2086 Julian years instead of 2085; and, by this inadvertency, I gave myself the trouble of going through the whole calculation from beginning to end a second time, and of correcting all my numbers; though the error accruing from this over-reckoning of that interval, might well have been neglected in this investigation.

“ To understand how it is that the lesser is the true interval, you must know that it is the uniform error of chronologers, reckoning by the æra of our Lord, to reckon the years before our Lord too many by one. The year which chronologers call the year before Christ 326, was the year of the Julian period 4388, as you may see by turning to Blair’s tables, Petavius, or Usher. The year of our Lord 1760 was the year of the Julian period 6473; the interval, therefore, is 2085 Julian years. The reckoning by the æra of our Lord, when we have to do with time antecedent to the æra, is seldom conducted with precision but in astronomical tables. If you turn to Mayer’s tables, you will find there, in the first page of the epochs of the Sun’s motions, (p. 6.) and again in the first page of

of the moon's epochs (p. 36) a year of Christ, 0; and it appears by the epochs ascribed to this year of Christ, 0, that it is the year of the Julian period 4713. Now, the year of the Julian period 4713, chronologers call, as you will see again by their tables, the year *before* Christ 1; at the same time they call the next succeeding year of the Julian period, *viz.* 4714, the year *after* Christ 1; and by this inaccuracy of their language, they in effect represent the interval between any numerical day of the year 4713 of the period, (the 1st of March for instance) and the same numerical day of the very next year of the period, as consisting of two whole years instead of one."

Having now established in the most solid manner, and upon unexceptionable principles, that the first year of the vulgar æra of Christ was denominated 0,* it hence follows, that as soon as the first year was completed, and the second commenced, then that year would be marked or dated 1, signifying, therefore, that one year was elapsed and the second flowing

* Many persons quibble about the signification of the word *nothing*, or 0. They should, however, always consider attentively the subject to which they apply that expression. To those acquainted with the first principles of mathematics, it is well known that the secant of 0 is a fixed quantity, being equal to the radius: and that the natural number answering to the logarithm of 0 is 1. See also Sir Isaac Newton's Principia, Lib. II. Prop. X. and the various writings of mathematicians.

ing on. In like manner, the interval of time between the beginnings of the second and third was dated 2; and, therefore, the third year was completed with the expiry of the year marked 2. The fourth year of the æra was completed at the termination of the year marked 3. And hence, by carrying forward the reckoning in the same manner, the first century will be found to be completed at the termination of the year denominated 99. Therefore, the eighteenth century terminated with the last day of the year marked 1799, and the nineteenth century commenced with the first day of January of the year whose date is 1800.

We have shown that the first year of our æra, as well as that of every other æra, is marked or dated 0, and consequently, that a century begins with an even number of hundreds of years: we will now, as a farther confirmation, proceed to show, from many respectable authorities, that the nineteenth century commenced with the first instant of the year 1800.

Dr. Playfair, in his *Chronology*, page 22d, expresses himself as follows. "In the beginning of the 18th century, viz. A. D. 1700, the epacts must be diminished upon account of the omission of biffextile." Hence, since the eighteenth century began with the year 1700, the nineteenth century necessarily commenced with the beginning of the year marked 1800. Again, in page 25, he says, "This rule will

will not apply after the expiration of the present century, for the year 1800 will not be a leap year, for a reason elsewhere assigned." Dr. Playfair's Chronology was published in the year 1784, and, therefore, he did not consider the year 1800 as being in the eighteenth century. Any person who will take the trouble to consult the Doctor's Chronological Charts, will instantly perceive that the several centuries begin with even hundreds of years.

Mr. Emerson, in showing the method of finding the dominical letters, in page 22 of his Chronology, says, "To make this rule general for the new stile, instead of 17, between the beginning of 1800 and 1900, add 5; between 1900 and 2100, add 21; from 2100 to 2200, add 9, &c. And in general add 16 more at every hundred years forward, except such as are divisible by 4." Again, in page 26th, "It has been shown before, that at the beginning of every century, 16 is to be continually added, for a new additional number," &c. Hence, each century begins with even hundreds of years; and, therefore, the nineteenth century commenced with the beginning of the year marked 1800. Mr. Emerson was an excellent mathematician.

In the table for finding the Paschal limit, by the Earl of Macclesfield, inserted in the Philosophical Transactions for the year 1750, the several centuries are marked as follow. 1700 to 1899; 1900

to

to 2199; 2200 to 2299; 2300 to 2399; 2400 to 2499, 2500 to 2599, &c. inclusive. Hence the eighteenth century began with 1700, and the nineteenth century ended with the year marked 1899, and so of other centuries. Therefore, the nineteenth commenced with the beginning of the year 1800.

“The act of Parliament passed in the year 1751, for correcting the kalendar of time in this country, was certainly framed by the collected wisdom and experience of the most profound astronomers and chronologists of the age. The accuracy of their calculations, and their general deductions, no man has yet ventured to call in question; and their opinions having received a legislative sanction, may, without presumption, be considered as not only high, but conclusive authority.

“On looking into the table annexed to this statute for finding Easter day, from the date of the act till the year 1899 inclusive, your readers will find these words—“For the *next century*, that is, from the year 1800 till the year 1899 **INCLUSIVE**, add to the current year only its fourth part, and then divide by 7 and proceed as in the last rule.”

“In addition to this, whoever will take the trouble to look into the tables and calculations referred to in the said statute will find that they all proceed upon—99 closing a round of time—so that to maintain a contrary doctrine would be to overthrow the leading principle

principle or data upon which all the calculations of the statute are founded—Whoever does so, ought to be able to refer to some authority of equal respectability.” *

In Todd's *Perpetuum Kalendarium Astronomicum*, page 20, is a table of which the following is the title, “A Table shewing the number of direction, both in the English and Foreign accounts, calculated for an hundred years, beginning with Anno Domini 1700, and ending with 1799.” From hence it is evident he understands the eighteenth century to be contained between the beginning of the year dated 1700 and the end of that marked 1799.

Again, in the *Perpetual Calculator*, page 21, it is said, “Now you will find two such tables already made in the new calendars of your common prayer books, one from the year 1700 to 1899, because the same index (viz. 1,) serves both centuries; and another from 1900 to 2199, for the index (viz. 2,) remains permanent during 3 centuries.”

In the tract upon Ecclesiastical Chronology, in the third volume of the book intituled *Matheſis Juvenilis*, page 268, the following rule is given to find the epact. “Seek the found or given golden number for the old epact in the *Tab. in Quest. 8. Chap. III.* and for the new one even till the year 1700 in *Tab. I. Quest.*

* See a paper in the *Edinburgh Evening Courant*, dated Edinburgh, January 15, 1800, and signed LEX.

Quest. 9. but throughout the following age from 1700 inclusively, to 1900 exclusively in *Tab.* II. of the same *Quest.* and the number answering to the side of it marked with the Roman Letters is the epact sought." Also in the same page is the following extract from the rule for finding the *Paschal Terms*. And the given new epact in this following *Tab.* I. gave in the preceding age, but in the latter table, from the year 1700 inclusively till the year 1900 exclusively, it will give the *Paschal Term* in the *Gregorian* computation." Again, in the rule for finding the cycle of the sun, page 271, is the following passage. "But in the second table of the same chapter, the same cycle will give the *Gregorian* dominical letter for the common years from 1500 to 1700 exclusively, and in the third for the age following with the included year 1700." From all this it is manifest, that the author of the above-mentioned book considers the several centuries to begin with even hundreds of years, and to end with those years whose two right-hand figures are 99.

The period of time between the beginnings of the years marked 1700 and 1800 is called the eighteenth century. Hence, by analogy, the interval of time between the beginnings of the years marked 1799 and 1800 is the eighteenth hundred year of our æra, and consequently, the eighteenth century terminated with the year dated 1799.

The

The following is part of the rule given by M. Cassini, in his *Astronomical Tables*, p. 111, for finding the eclipses of the satellites of Jupiter. "Take in Tables CVI. CVIII. CX. CXII. the epochs of the revolutions of the satellites for the year 1700 in this century, and for the year 1600 in the preceding century, with the numbers I and II which correspond to them."* Hence, as the above-mentioned book was printed in 1740, it is evident M. Cassini makes the eighteenth century begin with the year marked 1700; the seventeenth century with 1600; and, therefore, the nineteenth century commenced with the first day of the year dated 1800. The name of Cassini is familiar to every astronomer.

M. de la Lande, in showing the method of finding the epochs of the mean longitudes of the planets, expresses himself as follows, in p. 84. Vol. II. of his *Astronomie*. "But if it happened that the calendar had suffered one or two interruptions in the interval, as from 1800 to 1900, or from 1799 to 1899."† From this it is evident he considers the nineteenth century to be contained between the beginnings of the

* "Prenés dans les Tables CVI, CVIII, CX, CXII, l'époque des révolutions des satellites pour l'année 1700 dans ce siècle, & pour l'année 1600 dans le siècle précédent, avec les nombres I. & II. qui lui répondent."

† "Mais s'il arrivoit que le calendrier eût souffert une ou deux interruptions dans l'intervalle, comme si on alloit de 1800 à 1900, ou de 1799 à 1899," &c.

the years marked 1800 and 1900; or between the terminations of the years marked 1799 and 1899. Again, in the same page, M. de la Lande says, "In the case where they go from 1799 to 1899, the motion of one day must be subtracted, because the year 1800 suffers a diminution of a day, and that in the hundred years contained between 1799 and 1899 there are only 24 leap years."* Hence, it is obvious he considers the nineteenth century to be contained between the ends of the years 1799 and 1899.

In the following passage concerning the epacts, it will be observed, that M. de la Lande says in positive terms, the nineteenth century began with the year marked 1800. "The same line C in the general table answers for all the nineteenth century, which begins in 1800, as it had answered for the preceding century. † Again he says, "Thus the XXII century, which begins with 2100." ‡ Also, "Thus the epacts of this present century, which
corre-

* "Dans le cas où l'on iroit de 1799 à 1899, il faudroit donc ôter le mouvement d'un jour, parce que l'année 1800, souffrira une diminution d'un jour, et que les cent ans compris entre 1799 et 1899 n'ont que 24 biffextiles."

† "La même line C dans la table générale servira pour tout le XIX^e siècle qui commence en 1800, comme elle avoit servi pour le siècle precedent." La Lande's *Astronomie*, Tome II. page 243.

‡ "Ainsi le XXII^e siècle qui commence à 2100," &c. *Astronomie*, Tome II. page 243. See also Playfair's *Chronology*, page 22.

correspond to the same golden numbers, are less by unity than the epacts before 1700, because, that secular year not having been bissextile, the new moons are found a day more late.*

Again, M. de la Lande, in his discourse on the Gregorian Calendar, says, "In order that the vernal equinox may not hereafter deviate from the 21st of March, it is said that the leap years, which take place every four years, can no longer happen in the secular years 1700, 1800, 1900, but only in the year 2000; and so on for ever. Thus, the three secular years being always common years, the fourth shall be leap year, in the order following.

1600 biss.	2100 com.	2600 com.	3100 com.
1700 com.	2200 com.	2700 com.	3200 biss.
1800 com.	2300 com.	2800 biss.	3300 com.
1900 com.	2400 biss.	2900 com.	3400 com.
2000 biss.	2500 com.	3000 com.	4500 com.

They see that all the years of which the secular number is divisible by 4, will be bissextile, as 16, 20, 24,

* "Ainsi les Epactes de ce siecleci, qui repondent aux memes Nombres d' Or, sont moindres d'une unite que les Epactes avant 1700, parce que cette année seculaire n'ayant pas été bissextile, les nouvelles Lunes se trouvent un jour plus tard." Exposition du Calcul Astronomique par M. de la Lande. Paris 1762, pages 8 and 9.

24, 28, in like manner as the other years of which the last years are divisible by 4." *

Lastly, M. de la Lande says, "The epoch of a common secular year, such as 1800," † &c. Hence, since 1800 is a secular year, it is therefore, by def. v. the first year of a century.

M. Prestet, speaking of the epacts, says as follows. "The first revolution of the epacts, which we here show, answers for the present century, until the year 1700, which is not included.‡ Therefore, since the year

* "Pour qu'à l'avenir l'équinox du printemps ne puisse pas s'éloigner du 21 de mars, il est dit que les années bissextiles, qui avoient lieu de quatre ans en quatre ans, n'auront plus lieu dans les années séculaires 1700, 1800, 1900, mais seulement l'an 2000 et ainsi de suite à perpétuité; de sorte que trois années séculaires soient toujours communes, et la quatrième bissextile, dans l'ordre suivant :

1600 biss.	2100 com.	2600 com.	3100 com.
1700 com.	2200 com.	2700 com.	3200 biss.
1800 com.	2300 com.	2800 biss.	3300 com.
1900 com.	2400 biss.	2900 com.	3400 com.
2000 biss.	2500 com.	3000 com.	3500 com.

On voit que toutes les années dont le nombre séculaire est divisible par 4, seront bissextiles, comme 16, 20, 24, 28, de même que les autres années dont les dernières chiffres sont divisibles par 4. Astronomie, Tome II. page 220.

† "L'époque d'une année séculaire commune, telle que 1800," &c. Astronomie, Tome II. page 83.

‡ "La première révolution des épactes, qu'on expose ici, sert pour le siècle où nous sommes, jusques à l'année 1700 qui n'y est pas comprise," Nouveaux Elémens de Mathématiques, Paris 1689, Tome I. page 52.

year 1700 is not included in the seventeenth century, the period in which he lived; it is plain M. Prestet understood the eighteenth century would begin with the year marked 1700. And hence, the nineteenth century commenced with the year marked 1800.

M. Bezout, in his discourse upon the reformation of the Calendar, says, "But as this suppression of leap year at the beginning of the century, is too great by 5 h. 20', since there are only 18 h. 40' to subtract; therefore, the three successive centurial years are made common, and the fourth becomes leap year. Thus the years 1700, 1800 and 1900, are common years, and 2000 is leap year." † Again, in showing the method of finding the epact. "The rule which we come to give, might be of use from 1700 until 1800. But it suffers a modification at each century, because of the omission of leap year, which taking a day from the year, necessarily changes the age of the moon." § Hence, the year 1800 is the first of the nineteenth century.

The
 † "Mais comme cette suppression de l'année bissextile au commencement du siècle, est trop forte de 5 h 20', puisqu'il n'y a que 18 h 40', à retrancher, on ne fait la centième année, commune, que pendant trois siècles consécutifs, & dans le quatrième, elle redevient bissextile. Ainsi les années 1700, 1800 & 1900 sont des années communes, & 2000 est bissextile." Cours de Mathématiques, Tome VI. page 117.

§ "La règle que nous venons de donner, peut être d'usage depuis 1700 jusqu'à 1800. Mais elle souffre une modification à chaque

The following is an extract from the article *Cycle Solaire* in the *Encyclopédie, ou Dictionnaire Universel Raisonné des Connoissances Humaines*.

“The first of these tables will answer for the century which began with the year 1600; the second for the centuries which commenced with the years 1700, 2100, 2500, 2900, 3300, &c., and thus in a series of every 400 years; in like manner the third for the years 1800, 2200, 2600, 3000, 3400, &c. the fourth for the years 1900, until 2100; 2300 until 2500, 2700 until 2900, 3100 until 3300, 3500 until 3700,” &c.†

Again, in page 604. “Thus they form by this means seven tables, of which the first will be for the centuries which commence with the years 1600, 2500, &c., the second for those of the years 1700, 2600, &c., the third for those of the years 1800, 2700, 2800, &c., the fourth for those of the years 1900, 2000,

que siecle, à cause de l'omission de la bissextile qui ôtant un jour à l'année, change nécessairement l'âge de la Lune.” *Cours de Mathématiques*, Tome VI. page 139. See also *Nouveau Traité de Navigation &c.* par M. Bouguer, Paris 1781, page 154.

† La premiere de ces tables fera pour le siecle qui a commencé par l'année 1600; la second pour les siecles qui commencent par les années 1700, 2100, 2500, 2900, 3300, &c. and ainsi de suite de 400 en 400; de meme la troisieme pour les années 1800, 2200, 2600, 3000, 3400, &c. la quatrieme pour les années 1900 jusqu' a 2100, 2300, jusqu' a 2500, 2700 jusqu' a 2900, 3100 jusqu' a 3300, 3500 jusqu' a 3700, &c. Yverdon 1772, Tome XII page 603.

2000, 2900, &c., the fifth for those of the years 2800, 3000, &c., the sixth for those of 2100, 3100, 3200, &c., the seventh for those of the years 2300, 2400, 3300, &c. In such a manner, that after having ranged these seven tables vertically, the one beside the other, they write below, the figures of the secular years in the following order.

I. TAB.	II.	III.	IV.	V.	VI.	VII.
1600	1700	1800	1900	2100	2200	2300
			2000			2400
2500	2600	2700	2900	3000	3100	3300
		2800			3200	

and so of the rest.

They see that in this table the secular years follow themselves immediately in each horizontal line, with this exception, that the years which ought to be leap years are placed immediately under the preceding secular year, because that the solar cycle continues to be the same during 200 years.”*

The

* “Ainsi on formera par ce moyen sept tables, dont la premiere sera pour le siecles qui commencent par les années 1600, 2500, &c. la seconde pour ceux des années 1700, 2600, &c. la troisieme pour ceux des années 1800, 2700, 2800, &c., la quatrieme pour ceux des années 1900, 2000, 2900, &c., la cinquieme pour ceux des années 2100, 3000, &c., la sixieme pour ceux de 2100, 3100, 3200, &c., la septieme pour ceux des années 2300, 2400, 3300, &c. De sort qu’ apres avoir rangé se sept tables verticalement

The following is part of a rule for finding the next eclipse of the first satellite of Jupiter after a given day of a proposed month and year; given in a book printed in folio at Paris 1693, intituled *Recueil D'Observations faites en plusieurs voyages par ordre de sa Majesté pour perfectionner L'Astronomie et la Geographie, avec divers Traitez Astronomiques par Messieurs de l'Academie Royales des Sciences.*

"Take these epochs of the revolutions with the numbers I and II to the year 1600 for this century, and 1700 for the following." * Hence, according to the Royal Academy of Sciences at Paris, the seventeenth century began with the year 1600; the eighteenth with 1700; and, consequently, the nineteenth century commenced with the year 1800.

The ment les unes à côté des autres, on écrira au-dessous les chiffres des années séculaires dans l'ordre suivant.

I ^e TAB.	II.	III.	IV.	V.	VI.	VII.
1600	1700	1800	1900	2100	2200	2300
			2000			2400
2500	2600	2700	2900	3000	3100	3300
		2800			3200	

and ainsi de suite &c.

On voit que dans cette table les années séculaires se suivent immédiatement dans chaque rang horizontal avec cette exception que les années qui doivent être bissextiles sont placées immédiatement au-dessous de l'année séculaire précédent, parce que le *système solaire* continue alors à être le même pendant 200 ans."

* Accipe has epochas revolutionum cum numeris I & II ad annum 1600 pro hoc seculo, & 1700 pro sequenti.

The following narrative of this subject is extracted from Pye's *Carmen Seculare* for the year 1800.

"The controversy about the commencement of the nineteenth century, which has lately so much occupied the public mind, being of consequence to me, who am officially called on to give a public opinion on it, I very early turned my thoughts to the subject, and soon adopted the notion most generally received,—that January 1st, 1801, would be the first day of the nineteenth century.

"I found, however, all authority drawn from former precedents against me; I found that the secular masque of Dryden was performed at Drury Lane theatre early in the year 1700; and that Prior's *Carmen Seculare* was written for the same year, and obviously for the first of January. These examples were sufficient authority for me, independently of their showing the received opinion of that time. I found also in the schedule to the act of parliament for altering the style, and which is printed in all the Common Prayer Books, these words—'For the next century, that is, from the year 1800 to the year 1900 inclusive.' *

"In the French *Encyclopedie*, article *Lettre Dominicale*, we find, "Il changera en 1800, en 1900, en 2100,

* Though the meaning of this is very clear; yet, like some other parts of other Acts of Parliament, it is not very accurately expressed. See the next note.

2100, &c. en un mot au commencement de chacun des siecles dont la premiere annee n'est pas biffextile.' And again, under Cycle Solaire, explaining the tables, it says, 'La premiere de ces tables sera pour le siecle qui a commence par l'annee 1600; la second pour les siecles qui commencent par les annes 1700, 2100, 2500, 2900, 3400,' &c.

"There is yet a stronger authority arising from the history of the institution of the Christian era, as it is usually called, though now known not to be reckoned from the real birth of our Saviour, but which makes no difference with respect to the present question.

"A native of Scythia, Dionysius Exiguus, so named from his stature, who exercised the function of Abbot at Rome, in the sixth century, thinking it disgraceful that the Christians should reckon their years from the foundation of a city which was the seat of their persecutors, resolved to introduce a new era from the birth of Christ, which he fixed on the 25th of December, in the year of Rome 753; but to accommodate it to the Roman Calendar, he reckoned from the first of January ensuing, in the manner that he exemplified by the following table of the first century, and on which the calculation of the beginning and close of the century just commenced in the table in our Common Prayer Books is founded.

0	1	2	3	4	5	6	7	8	9	10	11	12
1	1	1	1	1	1	1	1	1	1	1	1	1
13	14	15	16	17	18	19	20	21	22	23	24	
1	1	1	1	1	1	1	1	1	1	1	1	1
25	26	27	28	29	30	31	32	33	&c. to 99.			
1	1	1	1	1	1	1	1	1	1	1	1	1

“ Thus much for authority ; it now remains to show how the difference of opinion has arisen.

“ Those who maintain that the nineteenth century does not begin till January 1801, consider the year One to mean the whole of the first year from 0 to 1. Those, on the contrary, who, following the above authorities, consider it as commencing January 1, 1800, conceiving 1800 not to mean the 1800th year, but that atom of time, if I may be allowed the expression, past before we can say it is, that marks the completion of the 1800th year from Christ ; * as one o'clock does the completion of the first hour : marking the cardinal number of the year from that event, and not the ordinal number of the year. It must

* This may possibly be illustrated by an anecdote of an indictment being set aside, because it stated that the crime was committed between the hours of four and five, which was impossible ; it should have been between four and five o'clock. or the most awful event that ever happened, the ninth hour is used for the completion of that hour, or, as we should now say, nine o'clock. Matthew xxvii. 46. Mark xv. 34. The Romans reckoned their hours in this manner, and sometimes their years, otherwise the precept of Horace, “ Nonum prematur in annum,” has been always wrong translated,

must be acknowledged that Isaacson, and after him Blair and Playfair, reckon according to the last mode; not so Cardanus Rider, and I presume is as good authority. He, in his Chronology for the present year, to take one splendid example for many, tells us Lord Nelson's victory happened 1798 years after Christ, and that it is two years since it happened.*

"The hours of the day on a clock, the mile-stones on the road, a carpenter's rule, the manner of reckoning the degrees of latitude and longitude from the equator, or the first meridian, all confirm this hypothesis, as marking not the whole spaces of their respective measures, but the end of them, and especially the years of a man's life. When a man says he is thirty, he does not mean that he is in his thirtieth year, but that thirty years have elapsed since his birth.†

"Having said thus much in defence of myself, and the authorities I follow, I beg leave to deprecate the resentment of those who are of a different opinion, for they are in general very warm in their cause. I do not positively insist that they are in the wrong; I only mean to shew on what grounds, and on what authority

* In a late publication on distinguished characters of the last year, it is thus described 1799—1800. This is exactly according to the table of Dionysius.

† The first of January may be called, according to the common era, the birth-day of Christ; and, as Pope says, a birth day

"Is but the funeral of the former year."

authority I am in the wrong, should I happen to be so; a favour I have seldom had granted by those with whom I have argued *viva voce*."

It is well known, that the Roman Jubilee, celebrated for many centuries with great solemnity, was always held in the secular year—or that of which the date was even hundreds, as the beginning of the century. And, hence, if this institution had been adapted to the Christian æra, and continued to the present period, it would have been celebrated in 1800, as the first year of the nineteenth century.

The testimonies of many eminent men might be given to show, that it is always the number of years elapsed since the common epoch of the Christian æra, by which the current year is marked. As it is, however, unnecessary to multiply examples, we shall confine ourselves to the following passage from M. de la Lande's Astronomical Tables, page 9.

"The table of equation hath been calculated for 1800, and its diminution for a century is found in Table V."

"But after a new revifal, M. de Lambre hath found that the table was more exact for the end of September 1801, or 1801 and 74 hundreds."*

There-

* "La table d'équation à été calculee pour 1800, et l'on trouve dans la table V. sa diminution pour un siècle."

"Mais après une nouvelle revision, M. de Lambre a trouve que la table etoit plus exacte pour la fin de September 1801, ou 1801 et 74 centiemes."

Therefore, at the end of the month of December of the year marked 1801, there will be 1802 years of the æra completed; and hence, the eighteenth century terminated with the end of the year marked 1799, and the nineteenth century began with the first day of January 1800.

As it is unnecessary to multiply examples from books, to show that the eighteenth century ended with the year marked 1799, and the nineteenth century commenced with the first day of the year marked 1800: we shall conclude this part of the subject with the following familiar illustrations.

Let it be supposed that a man was born at the first instant of our æra, and that he had lived more than a hundred years. While he was in his first year, or less than twelve months old, he would be said to be 0 year old; while he was in his second year, he would be one year old and part of another; and during the time he was in his hundredth year, he would be 99 years old and part of another year, and his age would have been dated accordingly. Hence his hundredth year would have been completed with the end of December of the year dated 99. Now, since he was supposed to have been born at the commencement of the æra, the first century would, therefore, be terminated with the end of December of the year marked 99. It hence, obviously follows, that the eighteenth century ended with the last moment of the year dated 1799, and the nineteenth century

commenced at the following instant, or upon the first day of the year marked 1800.

Again, let the day be supposed to begin at any given instant, as that of apparent noon, or when the sun's center is in the meridian. Then, although the first hour is that which is contained between noon and one o'clock, yet if any particular event was to happen at any given instant of that period, it is presumed that no person would mark the time of that event by 1; nor that which might happen at any instant of the interval between 1 and 2, by 2. Hence, the day being supposed to be divided into 24 equal parts, and numbered according to the method used by astronomers: If, then, a phenomenon was observed at $41' 24''$ after the time of the sun's transit, it would be written down oh. $41' 24''$;* and not 1h. $41' 24''$, as would be done by those who contend for the first year of the æra being denominated 1. And if the beginning of a solar eclipse was observed at $36' 52''$ after one; then as one hour and $36' 52''$ of another hour had expired since noon; the time of this observation would, therefore, be written down 1h. $36' 52''$, and not 2h. $36' 52''$. Again, if another observation was made at $18' 46''$ after the 23d hour, it would be written down 23h. $18' 46''$. This observation, therefore, was made in the 24th hour. In like manner, if any phenomenon, as that
of

* In the Morning Post of May 6th, the time of high water at London is said to be "Afternoon 2 min. after o."

of an occultation, &c. was observed on the 23d day of November 1799, then as there were 1799 years, and till the 23d of November of another year expired since the epoch of our æra; it is hence evident, that the above observation was made in the eighteenth hundredth year; and, of course, the eighteenth century terminated with the end of the year marked 1799, and the nineteenth century commenced with the beginning of the year dated 1800.

To the Navigator, also, this will be self evident, for he does not mark down his distance, before he has actually run that distance; that is, he does not write down the distance which the ship has run in any given interval, as one hour, at the beginning of that hour, but at the end of it. The same may be applied to travellers upon a road, &c.

Were it thought necessary, many more arguments might be adduced in support of the first year of the Christian æra being dated 0, and consequently, that the eighteenth century ended with the last day of the year marked 1799, and the nineteenth century began with the first day of the year dated 1800. It, therefore, only remains to answer those objections which are commonly made to it.

One of the principal arguments used by the advocates for the nineteenth century not commencing till the beginning of the year marked 1801, is contained in the following quere, and which is commonly put with

with a sneer; *Would you take ninety-nine guineas for a hundred?* To those persons the following reply may be made; *Would you give one hundred and one guineas for a hundred?* It is evident that none of these questions are applicable to the point, and that the one is as much to the purpose as the other.

It has also been asked, by those who propose the nineteenth century to begin with the year 1801, *If any thing remarkable happened in the year 0?* It may be replied, *Did any thing remarkable happen in the year 1?* It has however been shown, that in the year 0, a very remarkable total eclipse of the moon happened January 9th old stile. That the year 0 began upon Thursday old stile, or upon Saturday new stile. That the golden number for the year 0 is 1, the dominical letters D. C., and the epact 6d. 1h. 10' 11". That the year 0 was a leap year, and that there were two days of difference between the old and new stiles. Determined upon the same principles, and with the same degree of certainty that the first day of the year 1800 is found to have been Wednesday, or that the year 10000 will begin upon Saturday new stile; or that the ring of Saturn will disappear 27th September 1891; or lastly, that the planet Venus will appear like a black round spot, upon the sun's disk, upwards of 7h. 52', in the afternoon of Monday, June 14th, 2984. It has also been shown that the sun's longitude October 17th at 8 hours A. M. at Aberdeen in
the

the year 0 was $6^{\circ} 22' 18'' 29''' 3$. And the places of the sun, and moon, and of all the planets then known, have been given for the first instant of the year 0, according to the most celebrated astronomers. What farther evidence, therefore, can there be still wanting to prove that the first year of our æra is denominated 0?

Another principal argument is deduced from the usual way of expressing the year, either according to the manner of lawyers, or by the Latin phrases; of which, however, the first is evidently deduced from the last. In law deeds, &c. it is not uncommon to say, "In the year of our Lord," &c. Also, the Latin phrase, *Anno Domini*,* signifies, "In the year of our Lord;" *Anno Christi*, "In the year of Christ." To these it may be very briefly answered, that as upwards of five hundred years had elapsed from the birth of Christ, before the Christian æra was adopted;† the first year, therefore, of the æra, or the year

* The expression *Anno Domini*, as applied to 1800, or any other year, being an elliptic phrase, we may as well supply *peracto* as *currente*, the latter, however, is the meaning in which it is commonly taken in our translation, *In the year of our Lord*; but in the sense astronomers must use it, means the year so called, that is, 1800, although it ended the last day of the preceding December.

Vide in Eutropius (page 2, &c.) the use of the word *Milliarium*, in the ablative without a preposition, which can admit of no other meaning but the end of the mile.

† The vulgar æra of CHRIST's birth was never settled till the year 527, when Dionysius Exiguus, a Roman Abbot, fixed it to the

year of Christ's birth, was not accurately determined; there being an error of several years. The common

the end of the 4713th year of the Julian period, which was four years too late. Fergufon's Astronomy, London 1778, page 384.

That the difference between the æras that take their name from Christ, may be better understood, we are to take notice, that *Dionysius*, called *Exiguus*, was the author of this æra five hundred years after Christ, from which time they began to reckon from the Nativity or Incarnation of Christ; whereas before they used to number their years by the Consuls, and from the building of *Rome*, in the Roman Empire; and out of it by the years of each king's reign. This æra, sometimes called from its author, the *Dionysian*, is by no means to be looked upon as exact and agreeable to history. For it is not yet settled, whether it was the first, second, third, fourth, or fifth, year before the vulgar æra that Christ was born. Gregory's Astronomy, Vol. I. page 251.

Epoch of Christ, is the common epoch throughout Europe, commencing at the supposed time of our Saviour's nativity, December 25; or rather, according to the usual account, from his Circumcision, or the 1st of January. The author of this epoch was an Abbot of Rome, one *Dionysius Exiguus*, a Scythian, about the year 507 or 527. Hutton's Dictionary, Vol. I. page 433.

The prodigious difference there is between the Septuagint Bible and the Vulgate, in point of chronology, occasions an embarrassment, which is the more difficult to avoid, as we cannot positively say on which side the error lies. The Greek Bible counts, for example, from the creation of the world to the birth of Abraham, 1500 years more than the Hebrew and Latin Bibles, &c. How difficult is it to ascertain the years of the judges of the Jewish nation, in the Bible? What darkness is spread over the succession of the kings of Judah and Israel? The calculation of time is there so inaccurate, that the scripture never marks whether they are cur-

mon received opinion is, that Christ was born 4 years before the vulgar epoch of his birth, or common epoch of the Christian æra. This opinion was first given by *R. P. Deckerius*, about the year 1617. *Kepler* made the true æra of Christ's birth anticipate the vulgar æra by 5 years. *M. Ant. Capellus* by 6 years; whereas Professor *Sturmius*, by very good arguments, shows there is a difference of only 2 years.

Since, therefore, the true epoch of the Christian æra is not accurately settled; differing, by common consent, from the vulgar æra by 4 years; and as the years

rent or complete years. *Encyclopedia Britannica*, Vol. IV. page 756.

Christianity itself had subsisted near 1200 years before they knew precisely how many years had passed since the birth of our Saviour. They saw clearly that the vulgar era was defective, but it was a long time before they could comprehend that it required four whole years to make up the period. Abbe Denis the little, who, in the year 532, was the first among the Christians to form the era of that grand epoch, and to count the years from that time, in order to make their chronology altogether Christian, erred in his calculation, and led all Europe into his error. They count 132 contrary opinions of different authors concerning the year in which the Messiah appeared on earth. *M. Vallemont* names 64 of them, and all celebrated writers. Among all these authors, however, there is none that reckon more than 7000, nor less than 3700 years. But even this difference is enormous. The most moderate fix the birth of Christ in the 4000th year of the world." *Encyclopedia Britannica*, Vol. IV. page 757. See also *Kepler's* book of the year wherein Christ was born.

years of our æra are reckoned from the vulgar epoch; is it not absurd to call any given year of the vulgar æra, *Anno Domini*, or *Anno Christi*, when it is known to be about 4 years less than the truth? These expressions had, no doubt, been adopted by those who began to reckon their years by the vulgar æra of Christ; which, as we have already mentioned, was not adopted till upwards of 500 years after the epoch of the æra. And these expressions being once admitted, were adopted by others, and so handed down to the present time. It is, however, very easy to perceive, that these expressions, as well as many passages of the bible, were written only in order to accommodate them to the understanding of the common rank of men. Thus Paul, addressing himself to the Romans, says, "I speak after the manner of men, because of the infirmities of your flesh;"* which being applied to the present subject, is, that Paul did not speak to them after the manner of the astronomer or natural philosopher, otherwise he would neither have been believed nor understood. Again, "The holy Scriptures," says Varenius, "in physical matters, always speak according to appearances, and the capacity of the vulgar; as where the moon is said to be a great light, created to give light in the night, (Gen. i. 16); though the moon be not great in respect of the earth and fixed stars, nor hath any light in itself; neither

* Paul's Epistle to the Romans, chap. vi. verse 19.

neither doth it give light to the earth every night. Thus the *sun* is said to go forth from the end of the heavens, and to haste to it again, (Psal. xix. 6. Eccl. i. 15); whereas in truth there is no such end to be found. So in the book of *Job* (ix. 6. xxviii. 24), the earth is said to be of a plane and square figure, underpropped and supported with pillars; which is not to be understood in a literal sense, as even the most ignorant may perceive. More places might be quoted, but these are sufficient; for the holy *Scriptures* were not given us to philosophize by, but to increase our piety.* Lastly, Sir Isaac Newton, speaking of light and colours, says, "And if at any time I speak of light and rays as coloured or endued with colours, I would be understood to speak not philosophically and properly, but grossly, and according to such conceptions as vulgar people in seeing all these experiments would be apt to frame." †

There

* Varenus' Universal Geography, Vol. I. page 73. See also Desham's Astro-Theology, preliminary discourse, page 12; Astronomie par M. de la Lande, Tome I. page 418; Ozanam's *Cursus Mathematicus*, Vol. V. page 97. Galilœi *Systema Cosmicum*, page 669. Martin's Philosophical Grammar, page 142, &c. In this last book is the following passage, "I esteem the Bible not only a just History of Facts, but a divine Revelation, and the best System of natural Religion in being; but I am so far from thinking that we are to be directed in our Sentiments of natural Science, especially *Philosophy* and *Astronomy*, by the Scriptures, that I am apt to believe those Sciences, as they are now and truly understood, were entirely unknown to the Writers of those Books."

† Newton's Optics, Book I. page 90, London 1704.

There are many bad expressions in our language; which, however, we shall not enumerate, as not tending to illustrate the present subject.

Again, with respect to the expression *Anno Mundi*, that is, *In the year of the world*,—there is still a much greater degree of uncertainty in the year of its creation, than in the epoch of the Christian æra. According to *Gassendus*, the world was created 3950 years before the common æra of the birth of Christ.* According to *Hevelius*, 3963 years; *Petavius*, 3983 years; others place the creation 5199 years before Christ. † The common opinion, however, is, that the world was created 4007 years before the vulgar epoch of Christ, or 4008 years before the year of Christ 1. ‡ The Greek Church, and the Emperors of the East, used an epoch of the creation which was much more ancient, and makes the world to have been created 5509 years before the coming of Christ. § Some of the Grecians reckoned still more, namely, 5624 years. || And if the records of the Babylonians, the Egyptians and Chinese, can be credited, astronomical observations and calculations were made many thousand

* *Institutio Astronomica*, London 1675, page 63.

† *Gregory's Astronomy*, Vol. I. page 252.

‡ *Hutton's Dictionary*, Vol. I. page 434. *The Mosaic Theory of the Earth*, page 105.

§ *Keil's Astronomy*, page 266.

|| *Astronomie par M. de la Lande*, Tome II. page 159. See also *Playfair's Chronology*, Table xxvii. page 323.

land years before our account of the creation. Hence the absurdity of the phrase *Anno Mundi*, when it is impossible to tell how long it is since the world was created.

From hence it is evident, the expression *Anno Mundi* is very vague and incorrect, even much more so than those of *Anno Domini*, or *Anno Christi*. And, therefore, the conclusion in favour of the nineteenth century beginning with the first day of the year dated 1801, deduced from these premises, cannot be true. It is the result, therefore, either of ignorance, or probably rather to conform to common custom, for any person to use the expression *Anno Domini*, when he knows he is at least four years wrong, if he date the year from the vulgar epoch of the birth of Christ: and still much more so with respect to the expression *Anno Mundi*; since there may be an uncertainty of several thousand years in the common date of the creation of the world.

It has also been said, *What can an astronomer know about the commencement of the century?* By whom, pray, were years, seasons, centuries, &c. settled and determined? Is it not the astronomer, and none else? It is only the astronomer who can determine the exact quantity of the solar or tropical, the anomalistic, fiducial, and lunar years. It is only the astronomer who can predict the various celestial phenomena for time present, past, and to come. It is only the astronomer

nomer who is able to detect the fallacy of the mode of reckoning used by chronologers prior to the Christian æra; and the method he takes for that purpose is sure, and upon the same certain principles as the *Elements of Euclid*; but the limits of this tract will not admit of it to be exemplified.——Hence, the absurdity of the above quere is evident.

Having now shown by many infallible arguments, which it is unnecessary to recapitulate here, that the first year of our æra, as well as that of every other æra, is, and ought to be denominated 0—And having shown from the united testimonies of several eminent men, that the nineteenth century commenced the first day of the year marked 1800—And also, having answered the principal objections which have been made thereto—We shall therefore conclude with the following extracts from some of the public papers, as they contain several things not mentioned in the preceding tract.

The author, indeed, regrets that his time did not permit him to enlarge more upon this subject. This he presents to the public, merely as a hasty sketch, published at the repeated solicitations of many of his acquaintance.

APPENDIX,

CONTAINING

Extracts from some Letters which have appeared in the public Papers, relative to the Commencement of the Nineteenth Century.

IN some of the following extracts *Cardinal* and *Ordinal* numbers are mentioned; for the sake, therefore, of some of our readers, it will be necessary to define them.

DEFINITIONS.

I.

A **CARDINAL** number is that which expresses the quantity of units contained in that number, as *one, two, three, &c.* or 1, 2, 3, &c. in which there are 1, 2, 3, &c. units contained.

II.

An **ORDINAL** number is that which expresses the order in which any quantity or number is placed; as in the *first, second, third, or 1st, 2nd, 3rd, &c. orders.*

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THIS part of the Appendix is extracted from a London paper, of date 28th September 1798, and signed **CENTURION**. It is

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written

written by a person who appears to have paid more than ordinary attention to this subject; and contains several arguments not taken notice of in the preceding tract; which, it is presumed, will be convincing to many of our readers.

APPENDIX, No. I.

A FEW observations on some of the seven consecutive letters of the Seven Wise men, in one of the last monthly publications, upon the year 0 and the end of the Century, may not be unentertaining to those of your Readers, by this time, I suppose, a great majority of them, who have convinced themselves that the opinion of the Astronomer Royal and Dr. Herschel upon that subject is the right one.

One of those letter-writers signs himself *Omicron*, but with a soul great enough for an *OMEGA*, since he asserts, stout and courageous, that the notion of a year 0, which is the foundation of cardinal numbers applied to years, is "outrageous of the common sense and common practice of mankind;" and to convince us there is no such thing, very curiously instances the years of the King's reign, of the American Independence, and the French Republic; to which never any but *ordinal* numbers are applied! I have now before me a Paris and a Lille Calendrier, one of which says it is, "*pour la 2 de annee Republicaine*," and the other calls itself, "*Calendrier de l'an 2 de la Republique Francoise*," meaning precisely the same thing. And "*l'an 6*" which we have seen upon their Newspapers for this twelvemonth past, and "*l'an 7*," which we shall now see, as they are just beginning their 7th year, are just as well understood by every Frenchman to be the *sixth* and *seventh* year, as if the ordinal nouns represented by those cyphers had been written at length, and as Louis *quinze*, and Louis *seize*, are understood by them, and by us too, to mean *quinzieme* et *seizeime* de ce nom. But the cardinal nouns *six*, *sept*, *quinze* and *seize* are monosyllables

(at least in prose), and their ordinals are trifyllables. The first great purpose of speech is to communicate our thoughts; and the second is to do it with dispatch; whence arises the so very frequent use in the French language of cardinal nouns in letter, for ordinals in spirit. Thus, amongst other instances; when two ordinal nouns are connected by a conjunction, the first is curtailed to a cardinal form; and were I speaking of the trouble of refuting cavils founded in ignorance of the idiom in which some people pretend to be critics, I might say, *c'est la cinq* (instead of *cinquieme*) *c'est le cinq ou sixieme fois qu'ils m'ont joue ce tour-la.*

I observed, Sir, in your paper of Friday last, in the message of the Directory, that your translator gave us, for *les Francois purent donc dans l'an 3 s'etablir*, &c. "The French were then allowed in the the year 3 to settle, &c." He left the number 3 then as he found it in the French; and from the knowledge he in general displays of that language, I make no doubt he understood it, and meant your readers should understand it, to be as much the sign of an ordinal noun, as that the date of your paper of that day, Sept. 21, was the twenty-first. But I thought he would have done better, to put the sign of the ordinal noun, or rather the noun itself, before its substantive, as more consonant to our usage. He did well however to avoid the error in a morning paper of that day, whose translator chose to say, the year *three*. He might with equal propriety speak of his Majesty, with the title of GEORGE THREE.

Having provided him with a suitable forerunner, I will now present to you, Sir, in the person of R. O. the very *Lucida Pleiadum* for extraordinary information. Give ear, O ye Reverend and Learned Judges, and reform the practice of your Courts, which in their pretensions to a precision of language the most rigorous and exact, insist that the date necessary to the validity of certain instruments to be this day executed, is, "the twenty-fifth day of Sept. in the thirty-eighth year of the reign of our Sovereign Lord the King, &c. and the year of our Lord Christ seventeen hundred and ninety EIGHT." R. O. informs you that you are wrong.

"We

“We IMPROPERLY (he says) use cardinal numbers in expressing the current year.” And if he had thought of it, I suppose he would also arraign the Courts for their as invariable practice of using the cardinal numbers to the hours of the day, as to the year of our Lord; for a culprit committing a crime between one and two o’clock in the morning, is indicted for having committed it between the hours of *one* and *two* (and not during the *second* hour) in the morning of such a day. But, advising him to change that IMPROPER mode of expression, lest he get into a scrape with Lord KENYON, let us now look at him in a scrape with himself. For after saying that it is “doing an *act of violence* to common sense to insist otherwise than that the present century will end Dec. 31, 1800, as prologue to his argument, he directly, by awkwardly handling the edge-tool, does an act of violence to his *own* sense, as it is to be collected from that prologuing context. The drift indeed of his argument, had he directed it rightly, tends more to the business before us than any thing else throughout the seven letters; for I have read them all, and with attention, well knowing who may sometimes hit, though he has not now, upon what a wise man misses.

R. O. then is for taking the road, and travelling a century of miles—fair resemblance to the journey of human life through a century of years—and says, very truly, “as soon as I begin my journey, I consider myself in mile the first; and when I have finished that mile, I say I have travelled one mile, and so on till I have reached the end of my journey; which cannot be the case, till I arrive at the end of the hundreth mile.” All which Innocence (as he does not tell us where his hundreth mile is) precedes a learned note, informing us, “This idea may be well applied to a geometrical scale of equal parts,” as if the road from Hyde Park Corner to Bath, and all our great roads, were not already divided by mile-stones into equal parts! But between what mile-stones lies R. O.’s hundreth mile? By his context we must understand that it lies between the hundreth and the hundred and first; or find him

him *felo de se*, not through addlepatenedness, but through malice aforethought, which is still more absurd. Now, pray, Sir, let me in a few words set this matter right for him; for it grieves one, when a Gentleman has, by I know not what inspiration, got hold of a good argument, that he should make such a villainous use of it, and not be told how to manage it another time. As soon as I begin my journey (and no body can begin it better than R. O. I only beg, not to travel so far*) I consider myself in mile the first; as the new-born child is in his first year, or the year 0; and when, gradually advancing, I arrive at the mile-stone which is at the end of that first mile, as the child is gradually advancing to the anniversary of his birth-day, I say I have travelled one mile. I have travelled it when I arrive at the mathematical line which may be supposed to be drawn across the road from the middle of the mile-stone; a hair's breadth beyond which is in the second mile. But the child's boundary line is four and twenty hours broad; he is a year old the whole day preceding the anniversary of his birth-day; for he had lived in 365 days; and our Laws, which know nothing of the fraction of a day, allow a young man to be of age and dispose of his property, if he lives to any part of the last day of his twenty-first year. Now, Sir, it demands no skill in Geometry to discover, that if the first mile-stone stands at the *End* of the first mile, the hundredth mile-stone must stand at the *end* of the hundredth mile. As soon, therefore, as I have passed the 99th mile-stone, I am in the hundredth mile, which is completed as soon as I arrive at the

100th

* An old friend of mine was asking, at an inn on the high Western road, what he must pay for a post.chaise to carry him to a place wide of it, at which he had formerly lived, and knew that the distance was just nine miles, and that the road was excellent, though without mile-stones. The innkeeper called it eleven miles. "Nay, nay, it is but nine, for"—"Indeed, Sir, we always take for eleven." "Well, well, my honest friend, you only take, like other people upon the road, more than your due, and I will pay you,"—unwilling that my Landlord should have it to say of him, "I am sure he is no *Gentleman*"—a word which in this country, so different from France, means always a *man gentle*—under imposition.—"I will pay you for eleven miles, provided you tell the post-boy, before my face, that he is not to drive me so far; for I shall positively (and you see I am lame) I shall positively have two miles to walk back." Boniface said the Gentleman should have the chaise for what he pleased.

rooth mile-stone. So when he who was once a young child, and is now become an old one, shall have travelled on to that birth-day on the eve of which he was 99 years old, he enters on his hundredth year, which he completes on the eve of that birth-day on which he enters into his hundred and first year. Consequently, supposing the life we have been tracing through a hundred years to be our Saviour's, the first century was completed Dec. 31, 99; and R. O. if he lives till the 31st of next December twelvemonths, will find that the Eighteenth century is at an end.

The whole of one letter might be quashed for a very violent Misnomer—a quash devoutly to have been wished for by its author—*Pompeio febres optandas!* For it is signed with the name of that ever to be venerated Philosopher and Astronomer, the first of mortals who had the greatness of mind to conceive the true system of the World, with the motion of the Earth making for us these years about which we are debating; who considered the knowledge of Numbers as the first of sciences, and who, among his other precepts, warned men to “Discourse not of Pythagorean doctrines without Light.” Of the light which has fallen to the lot of the *Pseudo-Pythagoras*, and how likely he is to start forth with his *εγεννα* † upon what others miss, we may form some judgment from his being so good to tell us, in a debate on the computation of measures of current time incapable of a denomination of number till their completion, that we cannot, with 99, make a century of counters or of soldiers; which has just as much to do with it as a Cock with a Bull, or the moon with a Green Cheese. ‡ Besides that, he has no authority, as I am informed by a very eminent Mathematician, for his division of the 0; which not only serves to mark the completion of the 24th, and beginning of the 1st, hour of the Astronomical day, but is the sign, index, or running title of that first hour. So much so, that a phænomeon at five minutes before one o'clock in the afternoon, would be dated by the Astro-
nomer,

† “I HAVE FOUND IT!”

‡ Quatre vingt dix neuf moutons et un Champenois font cent Bêtes. De quel pays etes-vous, mon Ami?

nomer, and by the navigator too, o. 55'. In the natural day, 12 is the sign of that hour, as one is of the second hour, &c. Thus the cardinal number of the year or the hour elapsed, always serves for the sign of the current year or hour; and as there can be no cardinal number to the *first*, o is by astronomers substituted for it, and hence becomes the foundation of cardinal numbers applied to years. I some time ago expressed a wish to know how the ellipsis, which there evidently is, in such expressions as "the hour one," and, "the year 1798," could be better supplied than by, "the hour *after* one hour has elapsed," and "the year *after* 1798 years have elapsed;" and by not being gratified in that wish, I must suppose either that there is nothing better to be suggested, or that it was not thought worthy of notice by any writer upon the subject but our P. P.

But P. P. talks, and others have talked, of Latin dates applied to our æra, which it seems is to be done by only converting the cardinal numbers of the current year into their ordinals, that's all: and what can be more easy? And for this is pleaded the authority of ancient charters and papal bulls, in their Anno Domini with ordinal nouns. But are they, the Pope now unfrocked, infallible? So far from it, that it is no greater wonder that ignorance should be found in them, than that in every age there should be persons to whom a model, imitable only in its defects, may prove a snare; since, that it proved so to some of his countrymen, we have the undoubted authority of HORACE. One of our writers thinks that no one "will scruple to call this year in Latin, nonagesimus *octavus*, as it was said of the Revolution in 1688, octogesimus *octavus* mirabilis annus." Call it then, Dear Sir, an *octavus* MIRABILIOR annus.

The years of the Roman æra, from the building of the city, were always ordinally reckoned, like the years of the reign of our King, and, like them, admit not of any difficulty. But the years from the birth of individuals were reckoned as with us, by either cardinal or ordinal nouns. Cicero (de Senec.) makes Cato say of him-

himself, in one place, that he was *quinque et sexaginta annos natus*; i. e. in his sixty-sixth year, *natus* being a participle of the past; and in another, *quartum annum ago et octogesimum*; i. e. he was eighty-three years old. The years of our æra, from the birth of an individual, are to be reckoned like those since the birth of every one of ourselves: as it has been all along agreed on both sides; there being no shadow of reason against it. We, then, like Cato, may reckon our years as we please, either in cardinal or ordinal numbers, or both. But it has pleased the wisdom of our laws to reckon them in cardinal numbers; and, in noticing the different capacities we assume at different ages, BLACKSTONE has mentioned (p. 463, V. I.) six of those different ages all in cardinal numbers; and our Courts of Law require that the year of our Lord should be dated in the same; whence it has become the general custom. Those Courts say that this is the year of our Lord 1798, and therefore it must be also his 1799th year; and an event in it might be recorded in Latin, as having happened a *Christo nato* (vel *post Christum natum*) *annos 1798*, which would either way be a true date, shewing that 1798 years had elapsed, and not offend the weak brethren with a *nonagissimum nono*. ("No, no!" will be a witty echo.) May not the date of the year of our Lord with cardinal numbers be an emendation of the ancient *Anno Domini* with ordinal numbers when the error of it was discovered at the revival of learning?

But, says P. P. "our common, and the natural notation of years and centuries, is beginning with one. Thus take the life of CICERO, or VIRGIL, or HORACE, digested into years; it begins with the *year one*." And then, Sir, he bids us—not, indeed, Mark him, and write his speeches in our books, though his words are worthy of mark—but he bids us, "See the life of CICERO by FABRICIUS." I flew to my FABRICIUS, prefixed to Westein's Edit. Cic. 2 V. Fol. Amst. 1724. I recollected what MIDDLETON had said in praise of his diligence and accuracy, and of the obligations he was under to him. Now, said I to myself—eager for the truth, but,

but, I must confess, almost trembling for the very weighty decision of so eminent a scholar, of great diligence and accuracy, *** and give you distinctly to understand, that FABRICIUS gives to the Usurper (a Satyr to Hyperion!) the flattest of contradictions! For in his "*Historia Ciceronis*," which he begins, NOT with the *year one*, but the *first* year of that Orator's life, he assigns a chapter to each year, and numbers them *all* ORDINALLY; every chapter having for its title the same form of ordinal reckoning, with the difference only of the different years; thus, Anno Urbis (such) Ciceronis (such) and such men Consuls. The title of the last chapter is, Anno Urbis 720, Ciceronis 64; Cofs fuerunt, &c. the city then had been built 719 years, and Cicero was 63 years old; and towards the end of that chapter, the Author says, "*Occisus est cum annum jam 64 AGERET*"; and in confirmation of it, directly quotes these words from Livy *vixit tres et sexaginta annos*. And MIDDLETON, who has that title of the last chapter of FABRICIUS, shewing Cicero to be in his *sixty-fourth* year, for his marginal date throughout 162 pages, says in the last of them, suitably to such a date, that Cicero was killed when he was 63, or, in his own words, "*After he had lived sixty-three years 11 months and 5 days*." After THIS, Sir, it seems almost too trifling an information to communicate—and we were not referred for it neither to FABRICIUS—that the lives of VIRGIL and HORACE, "*digested into years*"—"may good digestion wait on appetite, and health on both!"—begin like that of Cicero. NOT with the *year one*, but the *first* year, and proceed with the same, Anno Urbis (such) Virgilii, vel Horatii (such) and such men Cofs.

I might here rake up DIODORUS SICULUS and HESIOD to repeat what they have said of such a man as this which we have in hand; but not chusing to deal in hard words, like those ancient writers, or like the modern one of whom I am about to speak, I shall let him go with observing only, That if it was through ignorance, that we were exultingly referred to the diligent and accurate Chronologist, the Referrer must have as small pretensions to the charact-

of a Scholar, as, if it was *not* through ignorance, he can have to that of a Gentleman, which consists, he has been told, in being only a Bearer, and not a Designer, of Imposition.

The modern writer, who deals in hard words, signs himself D. C.; which two letters I understand to be the first and last of the name DOMINIC—and a special Inquisitor he would have made; and, no doubt given his voice with his brother *Dominics* at Florence (*but* the beginning of last century!) for plunging GALILEO in their deepest dungeon, * * * * because he maintained that the Earth, like a waiting maid, went round the Sun, when it was the popular opinion and established prejudice that the amazing magnificence of the glorious source of Light lacqueyed our dark, diminutive, and dirty ball! For most lustily, to be sure, does he lay about him, at what he, roundly and Rowland-like, denominates, at once, the *Falseness* and the *Folly* of advocates of the year 0, with whom, instead of smiling at them, he is so *provoked*; and all, forsooth, because *he* has thought proper to embrace the popular opinion and established prejudice against it! But it is no fault of ours, if truth produces hatred. Such we are told by a good judge is one of her qualities; and another certainly is—for D. C. proclaims it throughout his letter—that knowing how cruelly myriads of her votaries have, like Galileo, suffered from ANGER, she rejects the courtship of a Seeker under his dominion.

In the only part of his letter that has any tendency to argument, D. C. speaks of a watchmaker's circle. But from that Circle, truly *sine carens* to his purpose, he will reap as small advantage, as R. O. from the journey he took, when he should have staid at home; or P. P. from his Prance on his Hobby FABRICIUS, so vicious, without bridle and saddle. For be pleased to look at your watch, Sir, or rather your clock, and suppose an ephemera which, hatched at noon and dying at midnight, shall, in its life of 12 hours, travel round the circle on it. During the first 60 minutes it is in its first hour, or the hour 0 (though the sign of it in the natural day is 12), as the child and the traveller, during the first 365 days, and

1760 yards, are in their first year and mile. When the clock strikes one, it enters on its second hour, as the child on the first anniversary of his birth-day, and the traveller making a step beyond the first mile-stone, enter on their second year and mile. Thus, Sir, you see, that, in the 60th minute after 10 o'clock, the ephemera is 11 hours old; and that when the clock begins striking 11, it begins its progress through its twelfth hour, which is completed *before* the clock strikes twelve. Now, Sir, if this statement cannot be denied, it must follow, by the plainest deduction, that the hundredth year of the first century commenced Jan. 1, 99, and was completed before the great clock of time struck 100.

Probo aliter. Let the circle and the twelve numbers on it represent the zodiac and its twelve signs, with the sun's apparent progress through them, and——but I need go no farther; for it would be an ill compliment to your perspicacity not to suppose it will instantly discover we must have the same result; besides, that, in the words of the good proverbial verse, you put yesterday as a motto to I forget what, but which is very suitable to this short letter—*Le secret d'ennuyer, est celui de tout dire*.

Having now demolished my opponents' windows; for in what I have not touched, there was nothing but unglazed gaps in walls of mud; it is but fair that, with your leave, I should raise somewhat of a building for them to pelt at in return. And as you know, Sir, that the things we would convey to the mind by the *ear* (which may be said to be spoken to by the voice of your letter-press) affect it in a less lively manner than what are subjected to the more faithful and attentive *eye*, and which the spectator, ipse sibi tradens, can, as it were, lay hold of with his hands, you will permit me, I dare say, to illustrate my argument by a figure, to render it so visible and even palpable, that it will speak not only to the eye, but to the touch. It is a little column of ten stones, representing, with their cardinal and ordinal numbers, the first ten years of the life of Mr. BURKE, born Jan. 1, 1730, which are chosen for the easiness of exemplifying a centennial by such a decennial

centennial period. As the year 0 appears to me to be the foundation of cardinal numbers applied to years, and as in early life we are rising in age as well as stature, the column is constructed to be examined upwards.

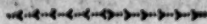
1739
9 YEARS OLD—10 th OF AGE
1738
8 YEARS OLD—9 th OF AGE
1737
7 YEARS OLD—8 th OF AGE
1736
6 YEARS OLD—7 th OF AGE
1735
5 YEARS OLD—6 th OF AGE
1734
4 YEARS OLD—5 th OF AGE
1733
3 YEARS OLD—4 th OF AGE
1732
2 YEARS OLD—3 ^d OF AGE
1731
1 YEAR OLD—2 ^d OF AGE

1730
FIRST YEAR
OR
THE YEAR 0

Supposing each year to have its proper denomination, and that a child born Jan. 1. 1730, is, the last day of that year, one year old, we see by this column that the same child, being nine years old, and in the tenth year of his age Jan. 1. 1739, will Dec. 31 of the same year be ten years old. Hence I think we should be brought to these conclusions, viz. that it is only by the help of a year 0, that such a computation *can possibly* be made; that if Edmund Burke completed his *tenth* year, Dec. 31. 1739, he must, had he lived so long, have completed his *hundredth* year Dec. 31. 1829, and that consequently by a parity of reasoning, the first century was completed Dec. 31. 99, and every succeeding century

tury Dec. 31. in a year which had 99 for the last two numbers of its date. Q. E. D. "Si tamen licuerit per Pontium Aquilam." Cæsar's P. P. and the rest of the radiant constellation.

But they will do well to be cautious how they hastily determine against the admission of those conclusions, lest upon a little consideration, they find that they must either let us pour them down (however uneasy to their stomachs) from one of the horns of the dilemma, or be more hurt by the other in the humiliation of contradicting themselves, if they do not abandon that computation of their *own* ages, in which they are with all the world agreed. For every man says, and very truly, that, analagous to what we have said of the child, he is, on the fortieth anniversary of his birth-day, not only forty years old, but likewise in the forty-first year of his age; which he could not be, if his *first* year was likewise the year *one*; for then he would be, at the same time, forty-one years old, and in his forty-first year. Now, Sir, it is said, that every man at forty is a fool or a physician. I would ask any one of the gentlemen who may be qualified to sustain either of these characters, in which of them it is, that, rejecting the year 0, he lays claim to this double, this both cardinal and ordinal computation of his age? What answer can he give me? FABRICIUS will not help him. The simple truth is evident. The year 40 is the year *after* 40 years have elapsed: and that number 40 is the sign of his forty-first year; as the hour four is the hour *after* four hours have elapsed; and the same of every other hour and year. And were our Saviour still in the flesh on earth, he would be 1798 years old, because so many have elapsed, and in the 1799th year of his age; and therefore we are within one year of the end of the century.



The following is extracted from a letter signed APPLEGIRTH, inserted in the Edinburgh Evening Courant of 19th August 1799.

APPENDIX,

APPENDIX, No. II.

LET us suppose the numerals put down thus, with a black line before each:

365

—1—2—3—4—5—6—7—8—9

I suppose each black line a year of 365 days. In my passage through the black line before the figure 1, I am *in my first year* and as soon as I finish the 365 days of which it is composed, I put down one, and I have actually completed one year. I am then *in my second black line or year*; when it is completed, I put down 2, and so on. It follows from thence, when I put down 10 or 100, I have completed my tenth or hundredth year; and of consequence that the century ends the first day of January one thousand eight hundred, when I am entitled to put down the figures 1800.

This is proved also from mile-stones—Would it not be ridiculous to say, when I arrive at the mile-stone marked 100, that I must proceed to another stone, and walk one hundred and one miles before I complete 100 miles?

The space before I come to the first mile-stone, is my black line or space of 365 days.

The pages of a book are another proof; but here many bewilder themselves from the pages being numbered at the top—Let them however take the *Edinburgh Almanack*, where the pages are numbered at the bottom, and all will be well.

FINIS.